CLAIMS

What is claimed:

1. A method of detecting BoNT/A activity by contacting a sample to a cell that contains an exogenous FGFR3 wherein said contacted cell is capable of BoNT/A intoxication and detecting the presence of BoNT/A activity of said contacted cell relative to a control cell, where a difference in said BoNT/A activity of said contacted cell as compared to said control cell is indicative of BoNT/A activity.

2. The method according to Claim 1, wherein said cell transiently contains an exogenous FGFR3.

3. The method according to Claim 1, wherein said cell stably contains an exogenous FGFR3.

4. The method according to Claim 1, wherein said FGFR3 is a mammalian FGFR3.

5. The method according to Claim 4, wherein said mammalian FGFR3 is a human FGFR3.

6. The method according to Claim 4, wherein said mammalian FGFR3 is a bovine FGFR3.

7. The method according to Claim 4, wherein said mammalian FGFR3 is a mouse FGFR3.

8. The method according to Claim 4, wherein said mammalian FGFR3 is a rat FGFR3.

9. The method according to Claim 1, wherein said FGFR3 is a bird FGFR3.

10. The method according to Claim 9, wherein said bird FGFR3 is a chicken FGFR3.

11. The method according to Claim 1, wherein said FGFR3 is an amphibian FGFR3.

12. The method according to Claim 11, wherein said amphibian FGFR3 is a frog FGFR3.

13. The method according to Claim 11, wherein said amphibian FGFR3 is a newt FGFR3.

14. The method according to Claim 1, wherein said FGFR3 is a fish FGFR3.

15. The method according to Claim 15, wherein said fish FGFR3 is a zebrafish FGFR3.

16. The method according to Claim 1, wherein said cell further contains a G1b polysialoganglioside.

17. The method according to Claim 16, wherein said polysialoganglioside is selected from the group consisting of GD1a, GD1b, GD3, GQ1b, or GT1b.

18. The method according to Claim 1, wherein said cell is a neuronal cell.

19. The method according to Claim 18, wherein said neuronal cell is a primary neuronal cell.

20. The method according to Claim 18, wherein said neuronal cell is an immortalized neuronal cell.

21. The method according to Claim 18, wherein said neuronal cell is a transformed neuronal cell.

22. The method according to Claim 18, wherein said neuronal cell is selected from the group consisting of a neuroblastoma cell, a neuronal hybrid cell, a spinal cord cell, a central nervous system cell, a cerebral cortex cell, a dorsal root ganglion cell, a hippocampal cell and a pheochromocytoma cell.

23. The method according to Claim 1, wherein said cell is a non-neuronal cell.

24. The method according to Claim 23, wherein said non-neuronal cell is a primary neuronal cell.

25. The method according to Claim 23, wherein said non-neuronal cell is an immortalized neuronal cell.

26. The method according to Claim 23, wherein said non-neuronal cell is a transformed neuronal cell.

27. The method according to Claim 23, wherein said non-neuronal cell is selected from the group consisting of an anterior pituitary cell, an adrenal cell, a pancreatic cell, an ovarian cell, a kidney cell, a stomach cell, a blood cell, an epithelial cell, a fibroblast, a thyroid cell, a chondrocyte, a muscle cell, a hepatocyte, a glandular cell.

28. The method according to Claim 1, wherein said sample is selected from the group consisting of a purified BoNT/A, a partially purified BoNT/A or unpurified BoNT/A.

29. The method according to Claim 1, wherein said sample is selected from the group consisting of a bulk BoNT/A, a formulated BoNT/A, a cosmetics BoNT/A formulation or a clinical BoNT/A formulation.

30. The method according to Claim 1, wherein said sample is a recombinant BoNT/A.

31. The method according to Claim 1, wherein said sample is selected from the group consisting of a raw food, a cooked food, a partially cooked food or a processed food.

32. The method according to Claim 1, wherein said sample is a sample taken from a mammal.

33. The method according to Claim 32, wherein said mammalian sample is selected from the group consisting of a tissue, a saliva, an excretion or a feces.

34. A method of reducing BoNT/A activity in a human comprising administering to said human a pharmaceutical composition comprising a molecule that selectively binds a FGFR3 wherein said selective binding reduces the ability of BoNT/A to bind to said FGFR3.

35. A method according to Claim 24, further comprising administering to said human a G1b polysialoganglioside.

36. The method according to Claim 34, wherein said polysialoganglioside is selected from the group consisting of GD1a, GD1b, GD3, GQ1b, or GT1b.

37. A method of screening a for a molecule able to compete with BoNT/A for selective binding to cells susceptible to BoNT/A intoxication by contacting said sample with a composition comprising an FGFR3 and detecting whether said molecule selectively binds said FGFR3, wherein selective binding of said molecule to said FGFR3 indicates that said molecule is able to compete with BoNT/A for selective binding to cells susceptible to BoNT/A intoxication, and wherein if said molecule is BoNT/A, said method does not comprise an LD_{50} assay.

38. The method according to Claim 37, wherein said contacting step is performed *in vitro*.

39. The method according to Claim 37, wherein said contacting step is performed *in vivo*.

40. The method according to Claim 37, wherein said FGFR3 is expressed on the surface of a cell.

41. The method according to Claim 39, wherein said cell transiently contains an exogenous FGFR3.

42. The method according to Claim 39, wherein said cell stably contains an exogenous FGFR3.

43. The method according to Claim 37, wherein said FGFR3 is a mammalian FGFR3.

44. The method according to Claim 43, wherein said mammalian FGFR3 is a human FGFR3.

45. The method according to Claim 43, wherein said mammalian FGFR3 is a bovine FGFR3.

46. The method according to Claim 43, wherein said mammalian FGFR3 is a mouse FGFR3.

47. The method according to Claim 43, wherein said mammalian FGFR3 is a rat FGFR3.

48. The method according to Claim 37, wherein said FGFR3 is a bird FGFR3.

49. The method according to Claim 48, wherein said bird FGFR3 is a chicken FGFR3.

50. The method according to Claim 37, wherein said FGFR3 is an amphibian FGFR3.

51. The method according to Claim 50, wherein said amphibian FGFR3 is a frog FGFR3.

52. The method according to Claim 50, wherein said amphibian FGFR3 is a newt FGFR3.

53. The method according to Claim 37, wherein said FGFR3 is a fish FGFR3.

54. The method according to Claim 53, wherein said fish FGFR3 is a zebrafish FGFR3.

55. The method according to Claim 37, wherein said composition further contains a G1b polysialoganglioside.

56. The method according to Claim 55, wherein said polysialoganglioside is selected from the group consisting of GD1a, GD1b, GD3, GQ1b, or GT1b.

57. The method according to Claim 37, wherein said cell is a neuronal cell.

58. The method according to Claim 57, wherein said neuronal cell is a primary neuronal cell.

59. The method according to Claim 57, wherein said neuronal cell is an immortalized neuronal cell.

60. The method according to Claim 57, wherein said neuronal cell is a transformed neuronal cell.

61. The method according to Claim 57, wherein said neuronal cell is selected from the group consisting of a neuroblastoma cell, a neuronal hybrid cell, a spinal cord cell, a central nervous system cell, a cerebral cortex cell, a dorsal root ganglion cell, a hippocampal cell and a pheochromocytoma cell.

62. The method according to Claim 37, wherein said cell is a non-neuronal cell.

63. The method according to Claim 62, wherein said non-neuronal cell is a primary neuronal cell.

64. The method according to Claim 62, wherein said non-neuronal cell is an immortalized neuronal cell.

65. The method according to Claim 62, wherein said non-neuronal cell is a transformed neuronal cell.

66. The method according to Claim 62, wherein said non-neuronal cell is selected from the group consisting of an anterior pituitary cell, an adrenal cell, a pancreatic cell, an ovarian cell, a kidney cell, a stomach cell, a blood cell, an epithelial cell, a fibroblast, a thyroid cell, a chondrocyte, a muscle cell, a hepatocyte, a glandular cell.

67. The method according to any one of claims 37-39, wherein said molecule is BoNT/A.

68. The method according to claim 67, wherein said molecule comprises a receptor binding domain of a BoNT/A heavy chain.

69. The method according to any one of claims 37-39, wherein said molecule is a molecule that selectively binds to the receptor binding domain of FGFR3 and is not BoNT/A

70. The method according to claim 69, wherein said molecule comprises an anti-FGFR3 antibody that binds to the receptor binding domain of FGFR3.

71. The method according to claim 69, wherein said molecule comprises a FGF that binds to the receptor binding domain of FGFR3.

72. The method according to claim 71, wherein said FGF molecule is selected from the group consisting of FGF1, FGF2, FGF4, FGF8 and FGF9.

73. The method according to any one of claims 37-39, wherein said molecule is a molecule that selectively binds to the receptor binding domain of FGFR3 and comprises a protease domain which cleaves a SNARE protein at a site other than that cleaved by BoNT/A light chain.

74. The method according to claim 73, wherein said protease domain comprises the active site of the light chain of a Clostridial toxin other than BoNT/A.

75. The method according to claim 74, wherein said protease domain comprises the active site of the light chain of BoNT/E.

76. A method of determining BoNT/A activity from a preparation comprising BoNT/A comprising the method of claim 37.

77. A method of marketing a neurotoxin capable of selectively binding to the same FGFR3 as BoNT/A comprising obtaining marketing approval from a governmental or regional regulatory authority for a therapeutic neurotoxin, wherein said neurotoxin is assayed for selective binding to a cell comprising contacting said neurotoxin with a composition comprising a FGFR3 and detecting whether said neurotoxin selectively binds said FGFR3, wherein selective binding of said neurotoxin to said FGFR3 indicates that said neurotoxin is

able to selective binding to cells susceptible to BoNT/A intoxication and wherein if said molecule is BoNT/A, said method does not comprise an LD_{50} assay; packaging said neurotoxin for sale in a manner consistent with the requirements of said regulatory authority, and selling said neurotoxin.

78. A method of marketing a neurotoxin capable of selectively binding to the same FGFR3 as BoNT/A comprising obtaining marketing approval from a governmental or regional regulatory authority for a therapeutic neurotoxin, wherein said neurotoxin is assayed for selective binding to a cell comprising contacting said neurotoxin to a cell that contains an exogenous FGFR3 wherein said contacted cell is capable of BoNT/A intoxication and detecting the presence of BoNT/A activity of said contacted cell relative to a control cell, where a difference in said BoNT/A activity of said contacted cell as compared to said control cell is indicative of BoNT/A activity; packaging said neurotoxin for sale in a manner consistent with the requirements of said regulatory authority, and selling said neurotoxin.